



UNITED STATES DEPARTMENT OF COMMERCE
Patent and Trademark Office

Address: COMMISSIONER OF PATENTS AND TRADEMARKS
Washington, D.C. 20231

12

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
08/908,778	08/07/97	SCHEPS	R 77222

LM02/1004
COMMANDING OFFICER
LEGAL COUNSEL FOR PATENTS CODE 0012
NCCOSC RDTE DIV
53510 SILVERGATE AVENUE RM 103
SAN DIEGO CA 92152-5765

TS
EXAMINER

PHILIPPE, G

ART UNIT	PAPER NUMBER
----------	--------------

2713

DATE MAILED: 10/04/00

Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

Office Action Summary

Application No.

08/908,778

Applicant(s)

Scheps

Examiner

Gims Philippe

Group Art Unit

2713



☒ Responsive to communication(s) filed on Jul 24, 2000

☐ This action is **FINAL**.

☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

A shortened statutory period for response to this action is set to expire 3 month(s), or thirty days, whichever is longer, from the mailing date of this communication. Failure to respond within the period for response will cause the application to become abandoned. (35 U.S.C. § 133). Extensions of time may be obtained under the provisions of 37 CFR 1.136(a).

Disposition of Claims

☒ Claim(s) 1-7 is/are pending in the application.

Of the above, claim(s) _____ is/are withdrawn from consideration.

☐ Claim(s) _____ is/are allowed.

☒ Claim(s) 1-7 is/are rejected.

☐ Claim(s) _____ is/are objected to.

☐ Claims _____ are subject to restriction or election requirement.

Application Papers

☐ See the attached Notice of Draftsperson's Patent Drawing Review, PTO-948.

☐ The drawing(s) filed on _____ is/are objected to by the Examiner.

☐ The proposed drawing correction, filed on _____ is ☐ approved ☐ disapproved.

☐ The specification is objected to by the Examiner.

☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119

☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).

☐ All ☐ Some* ☐ None of the CERTIFIED copies of the priority documents have been

☐ received.

☐ received in Application No. (Series Code/Serial Number) _____.

☐ received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

*Certified copies not received: _____

☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

Attachment(s)

☒ Notice of References Cited, PTO-892

☐ Information Disclosure Statement(s), PTO-1449, Paper No(s). _____

☐ Interview Summary, PTO-413

☐ Notice of Draftsperson's Patent Drawing Review, PTO-948

☐ Notice of Informal Patent Application, PTO-152

--- SEE OFFICE ACTION ON THE FOLLOWING PAGES ---

Art Unit: 2713

Response to Amendment

1. Applicant's amendment received on July 24, 2000 has been fully considered and entered, but the arguments are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 U.S.C. § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1-3, 5, and 7, are rejected under 35 U.S.C. 103(a) as being unpatentable over Contarino et al. (US Patent no. 5,822,047) in view of Scheps (US Patent no. 5,506,616).

Regarding claims 1 and 7, Contarino et al. discloses substantially in fig. 3 the same imaging lidar comprising a pulsed laser for generating a line scan of light beam pulses to illuminate an area surrounding a target (See Contarino et al. pulsed laser 72, and col. 4, lines 6-16), a photomultiplier tube for detecting energy from the light beam pulses scattered by the target and for generating an output signal representative of the scattered light beam (See Contarino et al. fig. 3, photodetector 20, and col. 3, lines 41-51), an image acquisition controller coupled to the pulsed laser and to the photomultiplier tube for selecting pulse width and pulse rate of the light

Art Unit: 2713

beam pulses and for generating a display signal from the output signal of the photomultiplier tube (See Contarino et al. col. 8, lines 1-15, and col. 6, lines 38-51), and a display coupled to the controller for generating an image from the display signal representative of the target (See Contarino et al. fig. 6, displays 84 and 89, and col. 8, lines 10-15).

Since Contarino et al. is silent about the same spatial discriminator coupled to the pulsed laser for steering the light beam sequence, and generating an image from the display signal representative of the target. One skilled in the art at the time of the invention would recognize the advantage of providing a spatial discriminator coupled to the pulsed laser for steering the light beam sequence and, generating an image from the display signal representative of the target in order to improve the spatially resolved images by allowing the subtracting out of the background leaving only the object in the image field and also to verify and confirm that the display signal of the object under water is of interest.

Therefore, the skilled artisan would be motivated to look to Scheps to include in Contarino et al.'s imaging lidar the spatial discriminator coupled to the pulsed laser for steering the light beam sequence and, generating an image from the display signal representative of the target (See Scheps col. 3, lines 2-30, col. 4, lines 7-18, and lines 33-46).

As per claim 3, Contarino et al. further discloses the same imaging lidar wherein the pulse width is about 5ns (See Contarino et al. col. 6, lines 38-39).

Art Unit: 2713

As per claim 5, Contarino et al. further discloses the same imaging lidar wherein the controller gates the output signal from the multiplier tube to select a range interval that includes the target (See Contarino et al. col. 9-16).

Regarding claim 2, Contarino et al. further discloses the same imaging lidar wherein the laser has a wavelength corresponding to blue-green color (See Contarino et al. col. 2, lines 61-64).

4. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Contarino et al.. (US patent no. 5,822,047) in view of Scheps as applied to claim 1 above, and further in view of Schneider (US Patent no. 5,082,362).

As per claim 4, Contarino et al. and Scheps disclose substantially the same limitations as previously set forth in the above rejection of claim 1.

It is noted that Contarino et al. and Scheps fail to particularly disclose the same imaging system wherein the pulse rate is greater than 600 KHz.

Schneider discloses the same imaging system wherein the pulse rate is greater than 600 KHz (See Schneider col. 16, lines 31-33).

Therefore, it is considered obvious that one skilled in the art at the time of the invention having Ulich et al. and Schneider before him/her, would recognize the advantage of using a greater than 600 KHz pulse, and would be motivated to modify Contarino et al.'s lidar system by

Art Unit: 2713

providing Schneider's pulse rate greater than 600 KHz for the same purpose of giving finer control over the raster scan rate as taught by Schneider.

5. Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Contarino et al. (US Patent no. 5,822,047) in view of Scheps as applied to claim 1 above, and further in view of Geiger (US Patent no. 5,117,126).

Regarding claim 6, Contarino et al. and Scheps disclose substantially the same limitations as previously set forth in the above rejection of claim 1.

It is noted that Contarino et al. and Scheps fail to particularly disclose a periodically poled crystal gain element for generating laser output having frequency that is a multiple of a pumping frequency.

Geiger discloses a periodically poled crystal gain element for generating laser output having frequency that is a multiple of a pumping frequency (See Geiger col. 5, lines 45-56, and col. 6, lines 7-15).

Therefore, it is considered obvious that one skilled in the art at the time of the invention having Contarino et al. and Geiger before him/her, would have had no difficulty to modify Ulich et al.'s imaging lidar by incorporating the periodically poled crystal gain element for generating laser output having frequency that is a multiple of a pumping frequency for the same purpose of

Art Unit: 2713

achieving a balance of the effective gain of the crystals as taught by Geiger (See Geiger col. 3, lines 51-60).

6. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Gims S. Philippe whose telephone number is (703) 305-1107. The examiner can normally be reached on Monday through Friday from 8 a.m. to 4 p.m..

Art Unit: 2713


If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chris Kelly, can be reached on (703) 305-4856. The fax phone number for this Group is (703) - 308-9052 (formal responses) and (703) -308-5399 (for draft responses).

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (703)-305-3900

Gims S. Philippe



September 29, 2000



CHRIS S. KELLEY
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2700